USDA United States Department of Agriculture

Lake County Conservation District

2017 Pollinator Plantings

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Objective: Establish Pollinator Habitat and Improve Species Selection
County: Lake
Average annual Lake Co. precipitation: 13-14”
Dominant Soil Type: Mixed, but generally SiCL soils
Elevation: 3000 ft
Site Preparation: Varied, poor to average; very few well-prepared sites
Planting Date: March - May, 2017
Seeding Method: Broadcast
Acres Seeded: 5 acres, ~100 ≤ 2,500 sq. ft plots
Previous Site History: Varied, generally pastureland
Herbicide: Varied, some sites used herbicide, others did not
Irrigation: Most dryland, some received supplemental irrigation
Grazing: Wildlife only
Monitoring Dates: July - August 2017

Fig 1. Petal detectors.

Introduction:
The Lake County Pollinator Initiative began in the Spring of 2017. With a cooperative effort between the Lake County Conservation District (LCCD) and the NRCS Ronan Field office pollinator seed was provided to county residents and schools in the county for plots of up to 2,500 ft^2. The goals are to 1.) Increase pollinator habitat in Lake County 2.) Test species for establishment success in order to refine future recommendations. The 2017 mix contained 18 flowering forbs and 7 flowering legumes. The mix also included several annual pollinator-friendly forbs. Following monitoring in late summer 2017 the mix was then revised to remove species that did not establish and substitute new species to test.

Results:
Over 100 plots, summing to a total of 5 acres were established. In total 15 of the 23 species were present during monitoring. While monitoring species establishment was rated as “none, poor, good or excellent.” Sites receiving supplemental irrigation were monitored separately from dryland sites.

Fig 2. Pollinator plants in a garden.

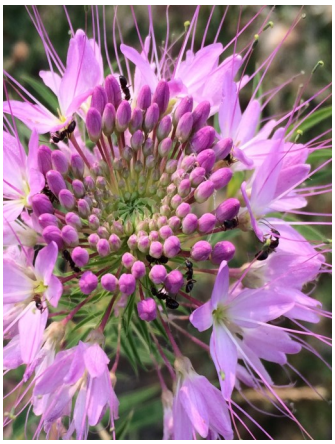

Fig 3. Rocky mountain beeplant.

Table 1. Mix used in Spring 2017.

Common Name	Scientific Name	Seeding Rate in Mix
Purple prairie clover	*Dalea purpurea*	0.78
White prairie clover	*Dalea candida*	1.32
Sanfoin	*Onobrychis*	0.61
Birdsfoot trefoil	*Lotus corniculatus*	2.77
Cicer milkvetch	*Astragalus cicer*	0.96
Yellow prairie coneflower	*Ratibida columnifera*	5.60
Rocky mtn beeplant	*Cleome serrulata*	0.48
Western yarrow	*Achillea millefolium*	7.14
Lewis flax	*Linum lewisii*	1.91
Indian blanket flower	*Gaillardia pulchella*	2.24
Arrowleaf balsamroot	*Balsamorhiza sagittata*	0.21
Mexican hat	*Ratibida columnifera*	5.60
Scarlet globemallow	*Sphaeralcea coccinea*	0.84
Small burnet	*Sanguisorba minor*	1.46
Black samspon	*Echinacea angustifolia*	0.12
Beebalm	*Monarda*	2.38
Prairie aster	*Machaeranthera tanacetifolia*	0.76
Firecracker penstemon	*Penstemon eatonii*	0.59
Maximilian sunflower	*Helianthus maximiliani*	0.93
Native annual sunflower	*Helianthus annuus*	0.59
Phacelia	*Phacelia tanacetifolia*	4.35
Oil seed sunflower	*Helianthus annuus*	0.83
Black-eyed susan	*Rudbeckia hirta*	12.78

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Table 2. Evaluation summary of species.

Species	Stand establishment	
	Non-Irrigated Sites	Irrigated Sites
Small burnet	Excellent	Excellent
Phacelia (annual)	Excellent	Excellent
Cicer milkvetch	Good	Good
Yellow prairie coneflower	Good	Poor
Western yarrow	Good	Poor
Lewis flax	Good	Good
Maximillian sunflower	Good	Good
Oil seed sunflowers (annual)	Good	Good
White prairie clover	Poor	None
Sanfoin	Poor	Good
Birdsfoot trefoil	Poor	Good
Rocky mtn beeplant	Poor	Poor
Indian Blanket Flower	Poor	Poor
Mexican hat	Poor	Poor
Native annual sunflower	Poor	Good
Purple prairie clover	None	None
Arrowleaf balsamroot	None	None
Scarlet globemallow	None	None
Black sampson	None	None
Beebalm	None	None
Prairie aster	None	None
Firecracker penstemon	None	None
Black-eyed susan	None	Poor

Fig 3. Lewis flax, western yarrow, and prairie coneflower.

Summary & Discussion:

As can be expected with an initiative such as this, site conditions and site preparation varied greatly between plots. Sites with less vegetative competition had better establishment than those without quality site preparation. A primary goal of this project is to find forbs that establish and compete in difficult environments under 'real-life' scenarios. It is unrealistic to expect most landowner to have extremely well-prepared site and we must find species that can thrive under difficult conditions.

Future:

This initiative will continue in 2018 with a 'new and improved seed mix'. Species that fail to establish will be removed and replaced with new test species.

New Mix, 2018:

Six species that did not establish in 2017 were removed: arrowleaf balamroot, scarlet globemallow, black sampson, beebalm, and firecracker penstemon. These six species were replaced with those in Table 3.

Fig 4. Coneflower, Yarrow and Blue Flax.

Fig 5. Annual Phacelia

Table 3. New species in mix.

Common Name	Scientific Name
Northern sweetvetch	*Hedysarum boreale*
Palmer penstemon	*Penstemon pameri*
Rocky mnt penstemon	*Penstemon strictus*
Plains coreopsis	*Coreopsis tinctoria*
Lance-leaf coreopsis	*Coreopsis lanceolata*
Showy milkweed	*Asclepias speciosa*
Clarkia	*Clarkia unguiculata*
Deerhorn clarkia	*Clarkia pulchella*
Globe gilia	*Gilia capitata*

Fig 6. Indian blanket flower.

Fig 7. Cneflower & Indian blanket flower.